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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,724	12/10/2004	Mario Andjelic	P16519US1	6053

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EXAMINER	
SEYE, ABDOU K	

ART UNIT	PAPER NUMBER
2194	

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12/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,724	ANDJELIC, MARIO	
	Examiner	Art Unit	
	Abdou Karim Seye	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed on October 01, 2007 has been received and entered. The currently pending claims considered below are Claims 1-29.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103 (a) which forms the basis for all obvious rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-29 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Cezary Dubnicki et al ("Software Support for Virtual Memory-Mapped Communication", 1996, pages 372-381) in view of Morris et al: **(US7007157).**

Claims 1, 15-17 and 27, Dubnicki teaches a network device driver architecture for enabling access between operating system kernel space and a network interface controller (NIC) as well as between user space and said NIC, comprising:

a kernel-space device driver adapted for enabling access between kernel space and user space via a kernel-space-user-space interface (fig. 3, section 5.3,page 378, col. 1); and

user-space device driver functionality adapted for enabling direct access between user space and said NIC via a user-space-NIC interface, wherein the user-space device driver functionality provides direct, zero-copy user-space access to the NIC. (fig. 3, section 5.3; page 378, col. 1; section 3, page 374, col. 1) Said user-space device driver functionality adapted for interconnecting said kernel-space-user-space interface and said user-space-NIC interface to enable integrated kernel-space access and user-space access to said NIC (fig. 3, section 5.3, page 378);But he does not disclose, Wherein the network device drive architecture provide simultaneous user-space and kernel-space access to a network layer over a single NIC port. However in the same field of endeavor Morris discloses a single, shared or common communication port for transmitting/receiving user and kernel mode data (abstract; fig. 1, col. 4, lines 21-30; fig. 3: 202).Therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Dubnicki's invention with Morris's invention in order to allow kernel mode data traffic and user mode data traffic to share a common network communication port. One would have been motivated to provide simultaneous user-space and kernel-space access to a network layer over a single NIC port because it would reduce cost/size/complexity of appliances/devices installed on a network (Morris, col. 3, lines 62-67).

Claims 2 and 19:Dubnicki teaches,

wherein said kernel-space device driver is adapted for establishing said kernel-space-user-space interface in relation to said user-space device driver functionality (fig. 3, section 5.3, col. 1, page 378).

Claims 3 and 18, Dubnicki teaches

wherein said user-space device driver functionality is adapted for fetching pointer information, pointing to data in a common memory, from a memory buffer associated with one of said kernel-space-user-space interface and said user-space-NIC interface and inserting said pointer information into a memory buffer associated with the other of said interfaces, thereby interconnecting said kernel-space-user-space interface and said user-space-NIC interface (page 373, section 3, col. 2; virtual memory-mapped communication model and transfer of data to address space; page 374, col. 1, page 374; data in shared memory and memory addressing). These claimed elements of Dunicki's reference meet the claimed limitations of the claim.

Claim 4, Dubnicki teaches

wherein each of said kernel-space-user-space interface and said user-space-NIC interface is associated with two memory buffers, a transmit buffer and a receive buffer (section 3, col. 2, page 373; col. 1, page 374; section 4, page 374; sender and receiver buffers).

As per claims 5-6 and 20-21, they are rejected for the raisons as claims 3 and 4 above.

Claims 7 and 22: Dubnicki teaches

Wherein said user-space device driver functionality is configured for execution in application context of a user application (fig. 3; user process page 374, col. 1, section 4)

Claims 8 and 23: Dubnicki teaches

Wherein said step user-space device driver functionality is implemented as user-space library functionality (fig. 3; VMMC library).

Claims 9-11: Dubnicki discloses a network device driver architecture as in claims 1, 15, 17 above comprising a user-space device driver and a kernel-space device driver, but he does not explicitly disclose a first and second operational mode; switching operational mode in response to user application failure. However in the same field of endeavor Morris discloses a network interface sharing methods and apparatuses that support kernel mode data traffic and user mode data traffic (abstract; fig. 3: 212 and 204; col. 6, lines 47-60) and switching mode (col. 6, lines 65-67 and col. 7, lines 1-5; col. 8, lines 23-26) as part of the debugging operation (col. 10, lines 20-25).

Therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Dubnicki's invention with Morris's invention in order to allow kernel mode data traffic and user mode data traffic to share a common network

communication port. One would have been motivated to provide simultaneous user-space and kernel-space access to a network layer over a single NIC port because it would reduce cost/size/complexity of appliances/devices installed on a network (Morris, col. 3, lines 62-67).

Claim 12, Dubnicki teaches, wherein said kernel-space device driver comprises:

a kernel-space agent for managing said kernel-space-user-space interface (section 4, col. 1, page 374); but he does not explicitly disclose a network device driver core operable for directly accessing said NIC in said first operational mode, and operable for routing outgoing data to said kernel space agent and for receiving incoming data from said kernel space agent in said second operational mode. However in the same field of endeavor Morris discloses a network interface sharing methods and apparatuses that support kernel mode data traffic and user mode data traffic (abstract; fig. 3: 212 and 204; col. 6, lines 47-60) and switching mode (col. 6, lines 65-67 and col. 7, lines 1-5; col. 8, lines 23-26) as part of the debugging operation (col. 10, lines 20-25).Therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Dubnicki's invention with Morris's invention in order to allow kernel mode data traffic and user mode data traffic to share a common network communication port. One would have been motivated to provide simultaneous user-space and kernel-space access to a network layer over a single NIC port because it would reduce cost/size/complexity of appliances/devices installed on a network (Morris, col. 3, lines 62-67).

As per claim 13-14, 24-26 and 28-29, they are rejected for the same reasons as claims above.

Response to Arguments

4. Applicant's arguments filed October 01, 2007 have been fully considered but they are not persuasive.

a. Claims 1, 15-17 and 27, Applicant argues that, "Morris does not provide for simultaneous integrated kernel-space access and user-space access to the NIC over the same NIC port". The examiner disagrees since Morris in (Fig. 3; col.6, lines 47-50) a single communication port 202 that is configures for accessing kernel space in element 216 and user space in element 218 or 214. Therefore it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Dubnicki's invention with Morris's invention in order to allow kernel mode data traffic and user mode data traffic to share a common network communication port. One would have been motivated to provide simultaneous user-space and kernel-space access to a network layer over a single NIC port because it would reduce cost/size/complexity of appliances/devices installed on a network (Morris, col. 3, lines 62-67).

Conclusion

5. **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abdou Seye whose telephone number is (571) 270-1062. The examiner can normally be reached on Mon - Fri, 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on 571-272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

AKS
December 05, 2007

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER